WHAT IS CLAIMED IS:

1.A semiconductor device provided with a pixel TFT formed in a pixel portion and a driver circuit having a p-channel TFT and an n-channel TFT formed in the periphery of the pixel portion on the same substrate, wherein:

the n-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

the p-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a third impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a fourth impurity region for forming a source region or a drain region provided outside the third impurity region;

the pixel TFT has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a concentration of an impurity element of one conductivity in the first impurity region and a concentration of an impurity element of opposite conductivity in the third impurity region become higher as the distance from the channel forming regions to which the respective impurity regions are adjoined to increases; and

a pixel electrode provided in said pixel portion has a light reflective surface, is formed on a second interlayer insulating film made of an organic insulating material, and is connected to the pixel TFT via an opening provided at least in a first interlayer insulating film made of an inorganic insulating material formed above the gate electrode of the pixel TFT and in the second interlayer insulating film formed in contact with the top surface of the first interlayer insulating film.

2. A device according to claim 1, wherein:

the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT of the driver circuit are formed of a heat-resistant conductive material; and

a gate wiring extending from said driver circuit to be connected to the gate electrodes is formed of a low-resistant conductive material.

3. A device according to claim 2, wherein the heat-resistant conductive material is an element selected from the group consisting of tantalum (Ta), titanium (Ti), and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

4. A device according to claim 1, wherein an angle of the taper portion of the gate electrode is between 5° and 35°.

5. A device according to claim 1, wherein said semiconductor

device is a device selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

6. A semiconductor device provided with a pixel TFT formed in a pixel portion and a driver circuit having a p-channel TFT and an n-channel TFT formed in the periphery of the pixel portion on the same substrate, wherein:

the n-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

the p-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a third impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a fourth impurity region for forming a source region or a drain region provided outside the third impurity region;

the pixel TFT has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a concentration of an impurity element of one conductivity in the first impurity region and a concentration of an impurity element of opposite conductivity in the third impurity region become

higher as the distance from the channel forming regions to which the respective impurity regions are adjoined to increases; and

a pixel electrode provided in said pixel portion has light transmittivity, is formed on a second interlayer insulating film made of an organic insulating material, and is connected to a conductive metallic wiring to be connected to the pixel TFT, the conductive metallic wiring is formed via an opening provided at least in a first interlayer insulating film made of an inorganic insulating material formed above the gate electrode of the pixel TFT and in the second interlayer insulating film formed in contact with the top surface of the first interlayer insulating film.

7. A device according to claim 6, wherein:

the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT of the driver circuit are formed of a heat-resistant conductive material; and

a gate wiring extending from said driver circuit to be connected to the gate electrodes is formed of a low-resistant conductive material.

8. A device according to claim 7, wherein the heat-resistant conductive material is an element selected from the group consisting of tantalum (Ta), titanium (Ti), and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

9. A device according to claim 6, wherein an angle of the taper

portion of the gate electrode is between 5° and 35°.

10. A device according to claim 6, wherein said semiconductor device is a device selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

11. A semiconductor device having liquid crystal held between a pair of substrates, wherein:

a pixel portion and a driver circuit formed in the periphery of the pixel portion are formed on one substrate;

an n-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a p-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a third impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a fourth impurity region for forming a source region or a drain region provided outside the third impurity region;

the pixel TFT has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a concentration of an impurity element of one conductivity in the first impurity region and a concentration of an impurity element of opposite conductivity in the third impurity region become higher as the distance from the channel forming regions to which the respective impurity regions are adjoined to increases; and

a pixel electrode provided in said pixel portion has a light reflective surface, is formed on a second interlayer insulating film made of an organic insulating material, and is connected to the pixel TFT via an opening provided at least in a first interlayer insulating film made of an inorganic insulating material formed above the gate electrode of the pixel TFT and in the second interlayer insulating film formed in contact with the top surface of the first interlayer insulating film;

said one substrate is bonded to the other substrate having a transparent conductive film formed thereon via at least one column-shape spacer formed overlapping the opening provided in the second interlayer insulating film.

12. A device according to claim 11, wherein:

the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT of the driver circuit are formed of a heat-resistant conductive material; and

a gate wiring extending from said driver circuit to be connected to the gate electrodes is formed of a low-resistant conductive material.

13. A device according to claim 12, wherein the heat-resistant conductive material is an element selected from the group consisting of tantalum (Ta), titanium (Ti), and tungsten (W); or a compound

having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

14. A device according to claim 11, wherein an angle of the taper portion of the gate electrode is between 5° and 35°.

15. A device according to claim 11, wherein said semiconductor device is a device selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

16. A semiconductor device having liquid crystal held between a pair of substrates, wherein:

a pixel portion and a driver circuit formed in the periphery of said pixel portion are formed on one substrate;

an n-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a p-channel TFT of said driver circuit has a gate electrode having a taper portion, a channel forming region, a third impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a fourth impurity region for forming a source region or a drain region provided outside the third impurity region;

the pixel TFT has a gate electrode having a taper portion, a channel forming region, a first impurity region for forming an LDD region provided so as to overlap the gate electrode and so as to be in contact with the channel forming region, and a second impurity region for forming a source region or a drain region provided outside the first impurity region;

a concentration of an impurity element of one conductivity in the first impurity region and a concentration of an impurity element of opposite conductivity in the third impurity region become higher as the distance from the channel forming regions to which the respective impurity regions are adjoined to increases;

a pixel electrode provided in said pixel portion has light transmittivity, is formed on a second interlayer insulating film made of an organic insulating material, and is connected to the pixel TFT via an opening provided at least in a first interlayer insulating film made of an inorganic insulating material formed above the gate electrode of the pixel TFT and in the second interlayer insulating film formed in contact with the top surface of the first interlayer insulating film; and

said one substrate is bonded to the other substrate having a transparent conductive film formed thereon via at least one column-shape spacer formed overlapping the opening provided in the second interlayer insulating film.

17. A device according to claim 16, wherein:

the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT of the driver circuit are formed of a heat-resistant conductive material; and

a gate wiring extending from said driver circuit to be connected

to the gate electrodes is formed of a low-resistant conductive material.

18. A device according to claim 17, wherein the heat-resistant conductive material is an element selected from the group consisting of tantalum (Ta), titanium (Ti), and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

19. A device according to claim 16, wherein an angle of the taper portion of the gate electrode is between 5° and 35°.

20. A device according to claim 16, wherein said semiconductor device is a device selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

21. A method of manufacturing a semiconductor device provided with a pixel TFT formed in a pixel portion and a driver circuit having a p-channel TFT and an n-channel TFT formed in the periphery of said pixel portion on the same substrate, said method comprising:

a first step of forming a semiconductor layer containing a crystal structure over said substrate;

a second step of forming a plurality of island-like semiconductor layers by selectively etching the semiconductor layer containing a crystal structure;

a third step of forming a gate insulating film in contact

with the island-like semiconductor layers;

a fourth step of forming a conductive layer made of a heat-resistant conductive material on the gate insulating film;

a fifth step of forming a gate electrode having a taper portion by selectively etching the conductive layer;

a sixth step of forming a first impurity region having a concentration gradient of an impurity element that imparts n-type conductivity in a direction parallel to said substrate by doping the impurity element that imparts n-type conductivity at least into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT through the taper portion of the gate electrode and through the gate insulating film;

a seventh step of forming a second impurity region by doping an impurity element that imparts n-type conductivity into the island-like semiconductor film that forms the n-channel TFT and the p-channel TFT of said driver circuit, using the gate electrode as a mask;

an eighth step of forming a third impurity region having a concentration gradient of an impurity element that imparts p-type conductivity in a direction parallel to said substrate by doping the impurity element that imparts p-type conductivity into the island-like semiconductor layer that forms the p-channel TFT of said driver circuit through the taper portion of the gate electrode and through the gate insulating film, and of forming at the same time a fourth impurity region by doping an impurity element that imparts p-type conductivity, but not via the taper portion of the gate electrode;

a ninth step of forming a first interlayer insulating film made of an inorganic insulating material above the n-channel TFT

of said driver circuit, the pixel TFT and the p-channel TFT;

a tenth step of forming a second interlayer insulating film made of an organic insulating material in contact with the first interlayer insulating film; and

an eleventh step of forming a pixel electrode having a light reflective surface to be connected to the pixel TFT, on the second interlayer insulating film.

22. A method according to claim 21, further comprising the steps of:

forming the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT in the periphery of said pixel portion from a heat-resistant conductive material; and

forming a gate wiring from a low-resistant conductive material, the gate wiring extending from said driver circuit to be connected to the gate electrode.

23. A method according to claim 22, wherein the heat-resistant material is made of an element selected from the group consisting of tantalum (Ta), titanium (Ti), molybdenum (MO) and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

24. A method according to claim 21, wherein said semiconductor device is selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

25. A method of manufacturing a semiconductor device provided with a pixel TFT formed in a pixel portion and a driver circuit having a p-channel TFT and an n-channel TFT formed in the periphery of said pixel portion on the same substrate, said method comprising:

a first step of forming a semiconductor layer containing a crystal structure on said substrate;

a second step of forming a plurality of island-like semiconductor layers by selectively etching the semiconductor layer containing a crystal structure;

a third step of forming a gate insulating film in contact with said island-like semiconductor layers;

a fourth step of forming a conductive layer made of a heat-resistant conductive material on the gate insulating film;

a fifth step of forming a gate electrode having a taper portion by selectively etching the conductive layer;

a sixth step of forming a first impurity region having a concentration gradient of an impurity element that imparts n-type conductivity in a direction parallel to said substrate by doping the impurity element that imparts n-type conductivity at least into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT through the taper portion of the gate electrode and through the gate insulating film;

a seventh step of forming a second impurity region by doping an impurity element that imparts n-type conductivity into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT, using the gate electrode as a mask;

an eighth step of forming a third impurity region having a

concentration gradient of an impurity element that imparts p-type conductivity in a direction parallel to said substrate by doping the impurity element that imparts p-type conductivity into the island-like semiconductor layers that form the p-channel TFT of said driver circuit through the taper portion of the gate electrode and through the gate insulating film, and of forming at the same time a fourth impurity region by doping an impurity element that imparts p-type conductivity, but not via the taper portion of the gate electrode;

a ninth step of forming a first interlayer insulating film made of an inorganic insulating material above the n-channel TFT of said driver circuit, the pixel TFT and the p-channel TFT;

a tenth step of forming a second interlayer insulating film made of an organic insulating material in contact with the first interlayer insulating film;

an eleventh step of forming a conductive metallic wiring to be connected to the pixel TFT; and

a twelfth step of forming a pixel electrode made from a transparent conductive film to be connected to the conductive metallic wiring, on the second interlayer insulating film.

26. A method according to claim 25, further comprising the steps of:

forming the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT in the periphery of said pixel portion from a heat-resistant conductive material; and

forming a gate wiring from a low-resistant conductive material, the gate wiring extending from said driver circuit to be connected to the gate electrode.

27. A method according to claim 26, wherein the heat-resistant material is made of an element selected from the group consisting of tantalum (Ta), titanium (Ti), molybdenum (MO) and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

28. A method according to claim 25, wherein said semiconductor device is selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

29. A method of manufacturing a semiconductor device having liquid crystal held between a pair of substrates and having a pixel TFT formed over one of said substrates in a pixel portion and a driving circuit having an n-channel TFT and a p-channel TFT formed over said one of said substrates in the periphery of said pixel portion, said method comprising:

a first step of forming a semiconductor layer containing a crystal structure over said one of said substrates;

a second step of forming a plurality of island-like semiconductor layers by selectively etching the semiconductor layer containing a crystal structure;

a third step of forming a gate insulating film in contact with the island-like semiconductor layers;

a fourth step of forming a conductive layer made of a heat-resistant conductive material on the gate insulating film;

a fifth step of forming a gate electrode having a taper portion by selectively etching the conductive layer;

a sixth step of forming a first impurity region having a concentration gradient of an impurity element that imparts n-type conductivity in a direction parallel to said one of said substrates by doping the impurity element that imparts n-type conductivity at least into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT through the taper portion of the gate electrode and through the gate insulating film;

a seventh step of forming a second impurity region by doping an impurity element that imparts n-type conductivity into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT, using the gate electrode as a mask;

an eighth step of forming a third impurity region having a concentration gradient of an impurity element that imparts p-type conductivity in a direction parallel to said one of said substrates by doping the impurity element that imparts p-type conductivity into the island-like semiconductor layer that forms the p-channel TFT of said driver circuit through the taper portion of the gate electrode and through the gate insulating film, and of forming at the same time a fourth impurity region by doping an impurity element that imparts p-type conductivity, but not via the taper portion of the gate electrode;

a ninth step of forming a first interlayer insulating film made of an inorganic insulating material above the n-channel TFT of said driver circuit, the pixel TFT and the p-channel TFT;

a tenth step of forming a second interlayer insulating film

made of an organic insulating material in contact with the first interlayer insulating film;

an eleventh step of forming a pixel electrode having a light reflective surface on the second interlayer insulating film to be connected to the pixel TFT via an opening provided in the first interlayer insulating film and in the second interlayer insulating film;

a twelfth step of forming on the other substrate at least a transparent conductive film; and

a thirteenth step of bonding said one substrate to said other substrate through at least one column-shape spacer formed overlapping the opening.

30. A method according to claim 29, further comprising the steps of:

forming the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT in the periphery of said pixel portion from a heat-resistant conductive material; and

forming a gate wiring from a low-resistant conductive material, the gate wiring extending from said driver circuit to be connected to the gate electrode.

31. A method according to claim 30, wherein the heat-resistant material is made of an element selected from the group consisting of tantalum (Ta), titanium (Ti), molybdenum (MO) and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

32. A method according to claim 30, wherein said semiconductor device is selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.

33. A method of manufacturing a semiconductor device having liquid crystal held between a pair of substrates and having a pixel TFT formed over one of said substrates in a pixel portion and a driver circuit having an n-channel TFT and a p-channel TFT formed over said one of said substrates in the periphery of said pixel portion, said method comprising:

a first step of forming a semiconductor layer containing a crystal structure over said one of said substrates;

a second step of forming a plurality of island-like semiconductor layers by selectively etching the semiconductor layer containing a crystal structure;

a third step of forming a gate insulating film in contact with the island-like semiconductor layers;

a fourth step of forming a conductive layer made of a heat-resistant conductive material on the gate insulating film;

a fifth step of forming a gate electrode having a taper portion by selectively etching the conductive layer;

a sixth step of forming a first impurity region having a concentration gradient of an impurity element that imparts n-type conductivity in a direction parallel to said one of said substrates by doping the impurity element that imparts n-type conductivity at least into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT through a

taper portion of the gate electrode and through the gate insulating film;

a seventh step of forming a second impurity region by doping an impurity element that imparts n-type conductivity into the island-like semiconductor layer that forms the n-channel TFT of said driver circuit and the pixel TFT, using the gate electrode as a mask;

an eighth step of forming a third impurity region having a concentration gradient of an impurity element that imparts p-type conductivity in a direction parallel to said one of said substrates by doping the impurity element that imparts p-type conductivity into the island-like semiconductor layer that forms the p-channel TFT of said driver circuit through the taper portion of the gate electrode and through the gate insulating film, and of forming at the same time a fourth impurity region by doping an impurity element that imparts p-type conductivity, but not via the taper portion of the gate electrode;

a ninth step of forming a first interlayer insulating film made of an inorganic insulating material above the n-channel TFT of said driver circuit, the pixel TFT and the p-channel TFT;

a tenth step of forming a second interlayer insulating film made of an organic insulating material in contact with the first interlayer insulating film;

an eleventh step of forming a conductive metallic wiring to be connected to the pixel TFT via an opening provided in the first interlayer insulating film and the second interlayer insulating film;

a twelfth step of forming a pixel electrode made from a transparent conductive film on the second interlayer insulating

film to be connected to the metallic wiring;

a thirteenth step of forming on the other substrate at least a transparent conductive film; and

a fourteenth step of bonding said one substrate to said other substrate through at least one column-shape spacer formed overlapping the opening.

34. A method according to claim 33, further comprising the steps of:

forming the gate electrodes of the pixel TFT and of the p-channel TFT and the n-channel TFT in the periphery of said pixel portion from a heat-resistant conductive material; and

forming a gate wiring from a low-resistant conductive material, the gate wiring extending from said driver circuit to be connected to the gate electrode.

35. A method according to claim 34, wherein the heat-resistant material is made of an element selected from the group consisting of tantalum (Ta), titanium (Ti), molybdenum (MO) and tungsten (W); or a compound having the above elements as a constituent; or a compound of a combination of the above elements; or a nitride having the above elements as a constituent; or a silicide having the above elements as a constituent.

36. A method according to claim 33, wherein said semiconductor device is selected from a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic amusement equipment, and a projector.